UPS Monitoring Software

User manual
Borri Power Guardian

For Linux kernel 2.6 and
any later version

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1. Installation

1.1 Note

➜ Operating OS: Linux kernel Version 2.6.0 version or above.
➜ Communication peripheral: Use either a serial port connector or USB connector.
➜ A SUPERVISIOR ID is required to install Borri Power Guardian.
➜ It must install ncurses and libusb 1.0 pack.
➜ Software will be installed in /etc/BorriPowerGuardian directory.

1.2 Install Instructions

1.2.1 Please login as an Administrator.

1.2.1 Switch on the UPS; connect the UPS communication port to the computer via a serial port or USB port.

1.2.2 Using terminal and login as SUPERVISIOR to operate installation.

1.2.2 In the installation file directory, locate "install" file to execute installation.
The file requires change authentication to access. You have to key in command as below: # chmod 775 install

1.2.3 Key in command as below to execute installation program: #❐/install

1.2.4 Upon installation completed, it will display "install complete".

1.2.5 Key in command as below to execute monitoring software:
/etc/BorriPowerGuardian /BorriPowerGuardian start to Start background monitoring.
/etc/BorriPowerGuardian /BorriPowerGuardian status to Open monitor viewer to monitor measurement and configuration data of UPS.
/etc/BorriPowerGuardian /BorriPowerGuardian restart to Restart background monitoring.

1.3 Uninstall Instructions

1.3.1 SUPERVISIOR ID is required to uninstall Borri Power Guardian linux.

1.3.2 Key in command as below to delete file directory:
rm – rf /etc/BorriPowerGuardian

1.3.3 Enter "/etc/rc.d" file directory and open "rc.local" file.
Locate "/etc/BorriPowerGuardian /BorriPowerGuardian start".
Delete the line to remove completely.

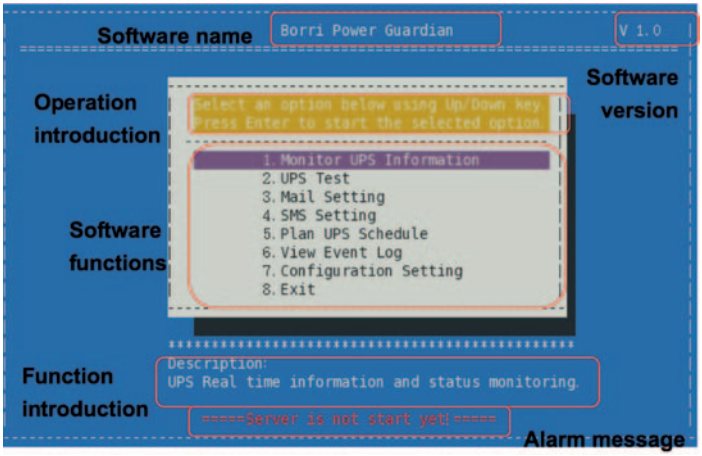
2. Function Explanations

2.1 Function Introduction

- ◆ Monitoring real time information and status of four machines at the same time.
- ◆ UPS Test: Includes Self Test, Test to battery low and Cancel Test.
- ◆ Mail Setting – Send UPS alarm messages via email
- ◆ SMS Setting – Send UPS alarm messages via sms.
- ◆ Plan UPS Schedule - Add, delete and read UPS schedule.
- ◆ View Event Log – Provide UPS monthly event log.
- ◆ Configuration Setting – Set configuration and communication of UPS.

2.2 Main Menu

2.2.1 Display explanations

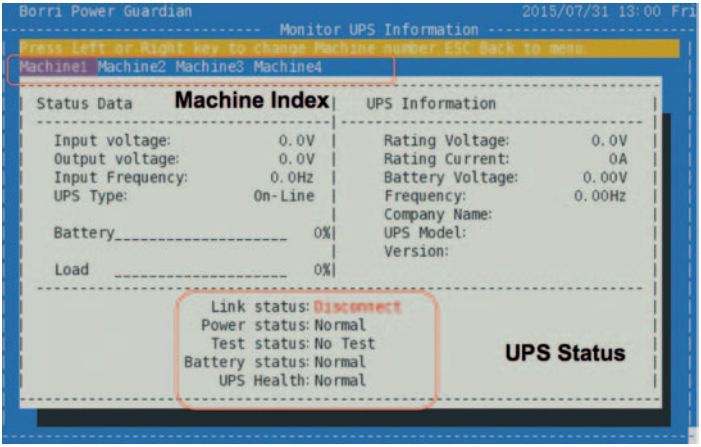


2.2.2 Alarm message- 'Server is not start yet'

The alarm message appears on the screen indicates the Borri Power Guardian program is not monitoring UPS. Please key in the command below to start monitoring:
Borri Power Guardian start

2.3 Real Time Information (UPS Monitoring Information)

2.3.1 Function and Operation Explanation



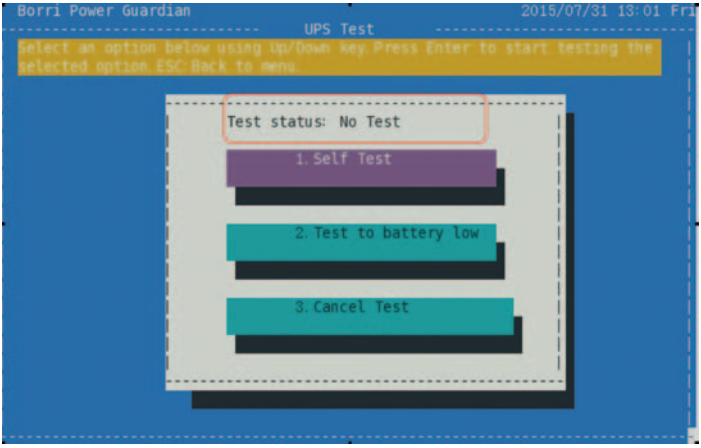
Borri Power Guardian program is capable of monitoring and display information of four UPS. Use the directional key to switch between machine index. The information and status of UPS is updated immediately according to the selected machine index. Besides UPS real time information, it also displays Link status (communication), Power status (utility), Test status, Battery status and UPS condition.

Listing status as below:

Status	Normal Display	Alarm Display
Link status	Connect	Disconnect
Power status	Normal	Fail
Test status	No Test	Test in progress
Battery status	Normal	Low
UPS Health	Normal	Fail

2.4 UPS Test

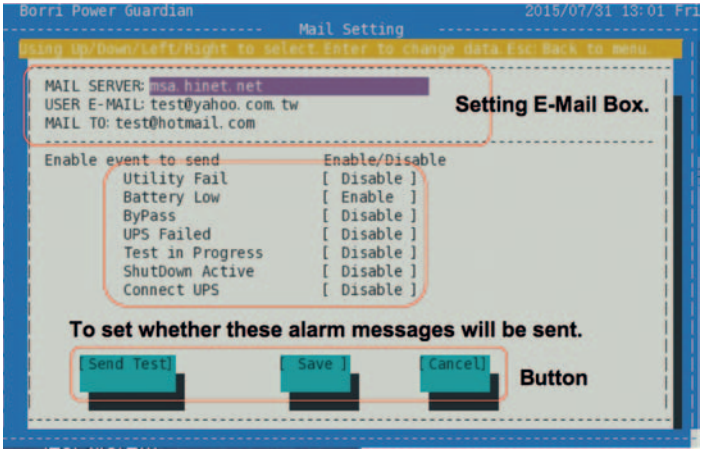
2.4.1 Function and Operation Explanation


Borri Power Guardian
2015/07/31 13:01 Fri
UPS Test
Select an option below using Up/Down key.Press Enter to start testing the selected option.ESC:Back to menu.
Test status: No Test
1.Self Test
2.Test to battery low
3.Cancel Test

UPS Test includes: Self Test, Test to battery low and Cancel Test. Use the directional key to select the type of test. Then press the Enter key to execute or cancel test command. The screen display current test status and real time monitoring information.
“Test in progress” indicates the machine is executing test command.
“No Test” indicates that no test command is executed.

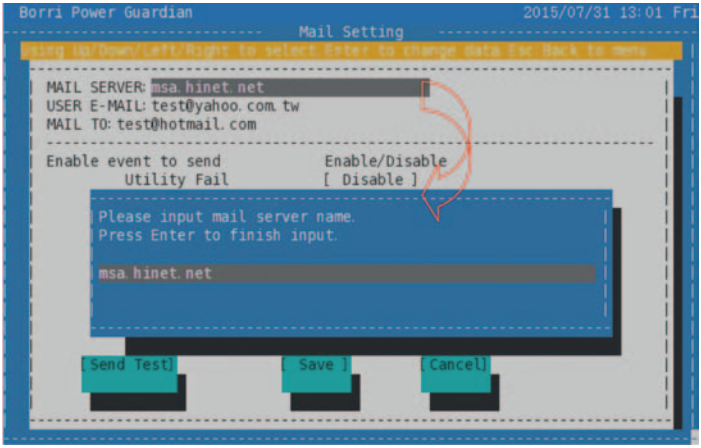
2.5 E-Mail Setting to Send Alarm Message (Mail Setting)

2.5.1 Function and Operation Explanation

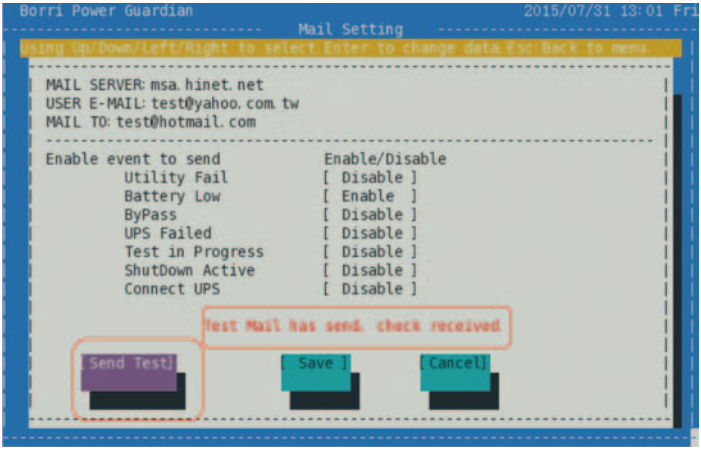

Borri Power Guardian
2015/07/31 13:01 Fri
Mail Setting
Using Up/Down/Left/Right to select Enter to change data Esc Back to menu.
MAIL SERVER: msa.hinet.net
USER E-MAIL: test@yahoo.com.tw
MAIL TO: test@hotmail.com
Setting E-Mail Box.
Enable event to send
Enable/Disable
Utility Fail [Disable]
Battery Low [Enable]
ByPass [Disable]
UPS Failed [Disable]
Test in Progress [Disable]
ShutDown Active [Disable]
Connect UPS [Disable]
To set whether these alarm messages will be sent.
[Send Test]
[Save]
[Cancel]
Button

In event of power failure or abnormality, the “E-Mail” function automatically informs user via email. User can select alarm messages to meet the requirement.
Ensure the E-Mail account is correct and the alarm message is enabled.
Click [Save] to save all settings.

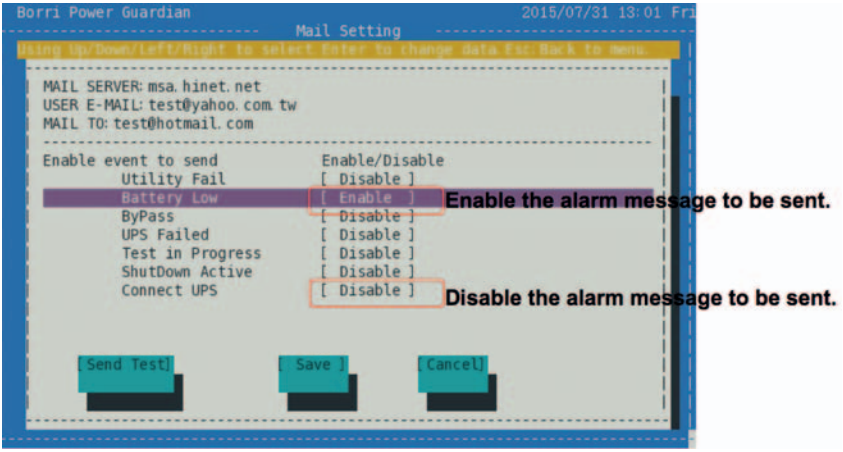
2.5.2 Setting E-mail Box and Sending Test Mail



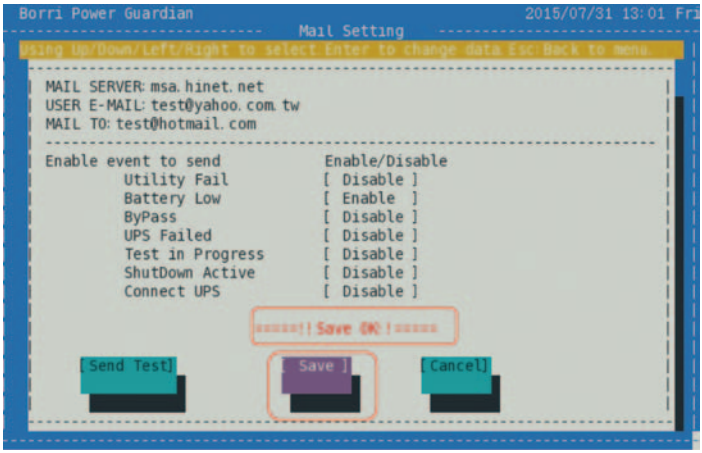
Use the directional key to select and press the Enter key to input data.
To send email alert to multiple recipients, insert a semi colon (;) between each email address.
Press Esc to return to menu.
To confirm the settings are correct, click [Send Test] to send a test mail to recipients.


Borri Power Guardian
2015/07/31 13:01 Fri
Mail Setting
Using Up/Down/Left/Right to select Enter to change data Esc: Back to menu.
MAIL SERVER: msa.hinet.net
USER E-MAIL: test@yahoo.com.tw
MAIL TO: test@hotmail.com
Enable event to send
Enable/Disable
Utility Fail [Disable]
Battery Low [Enable]
ByPass [Disable]
UPS Failed [Disable]
Test in Progress [Disable]
ShutDown Active [Disable]
Connect UPS [Disable]
Test Mail has send, check received
[Send Test]
[Save]
[Cancel]

2.5.3 Setting and Saving Alarm Message Enable or Disable

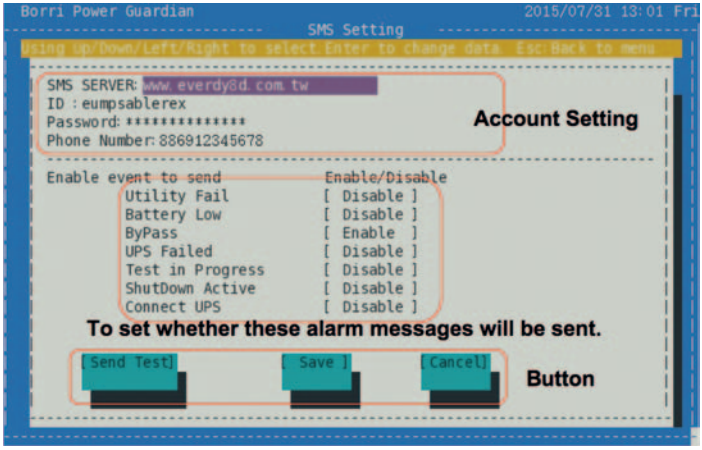

Borri Power Guardian
2015/07/31 13:01 Fri
Mail Setting
Using Up/Down/Left/Right to select Enter to change data Esc: Back to menu.
MAIL SERVER: msa.hinet.net
USER E-MAIL: test@yahoo.com.tw
MAIL TO: test@hotmail.com
Enable event to send
Enable/Disable
Utility Fail [Disable]
Battery Low [Enable]
ByPass [Disable]
UPS Failed [Disable]
Test in Progress [Disable]
ShutDown Active [Disable]
Connect UPS [Disable]
Enable the alarm message to be sent.
Disable the alarm message to be sent.
[Send Test]
[Save]
[Cancel]

Use the directional key to select the required event.
Press Enter key to enable or disable.
Click [Save] to save all settings.



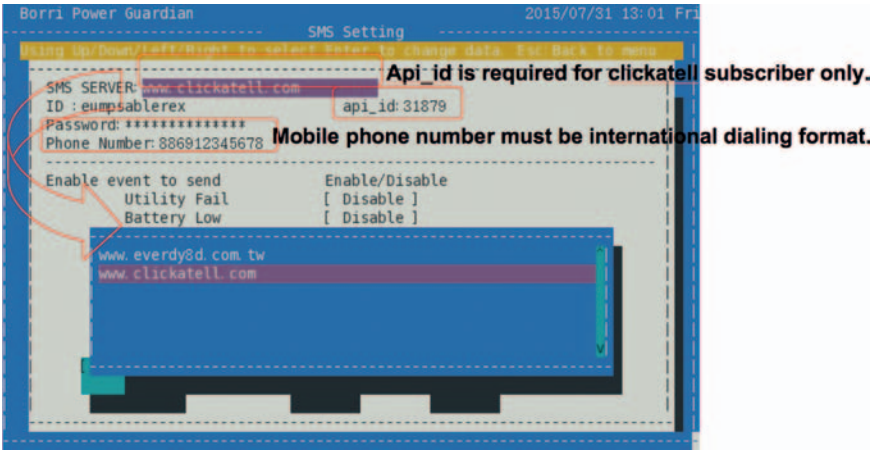
2.6 SMS setting to Send Alarm Message (SMS Setting)

2.6.1 Function and Operation Explanation



The “SMS” function send short message to user via internet during abnormality event. You can select the required alarm messages. Ensure the SMS account is correct and alarm message is enabled. Click [Save] to save all settings.

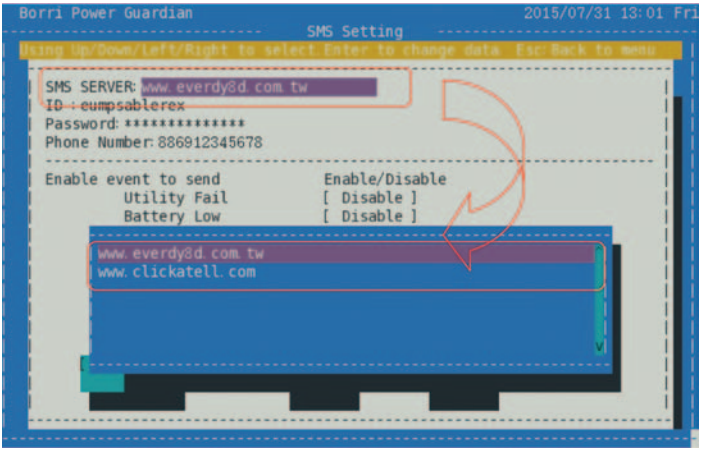
2.6.2 Setting SMS Short Message and Sending Test Short Message



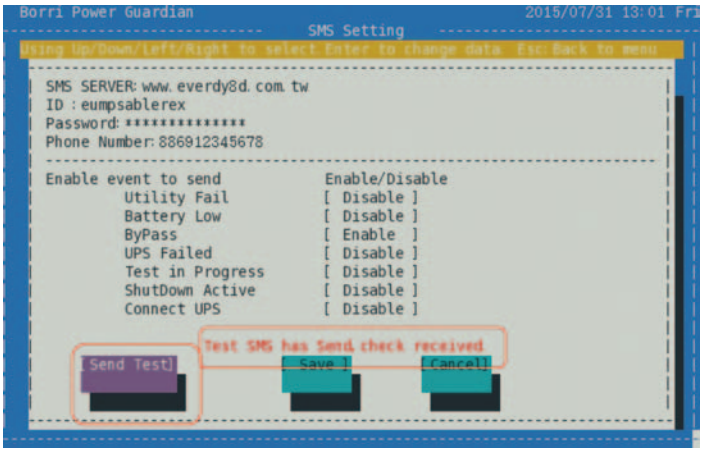
Use the directional key to select “SMS SERVER”. Press Enter key to show Short Message Service Providers. To use this function you need to subscribe to “every8d” and “clickatell” services. At the moment, the software only supports both “every8d” and “clickatell”. For more information on subscriptions and charges, please go to their websites as follow:

For “every8d”: Go to http://www.every8d.com/. Please subscribe as “Corporate” account in order to use the SMS function.

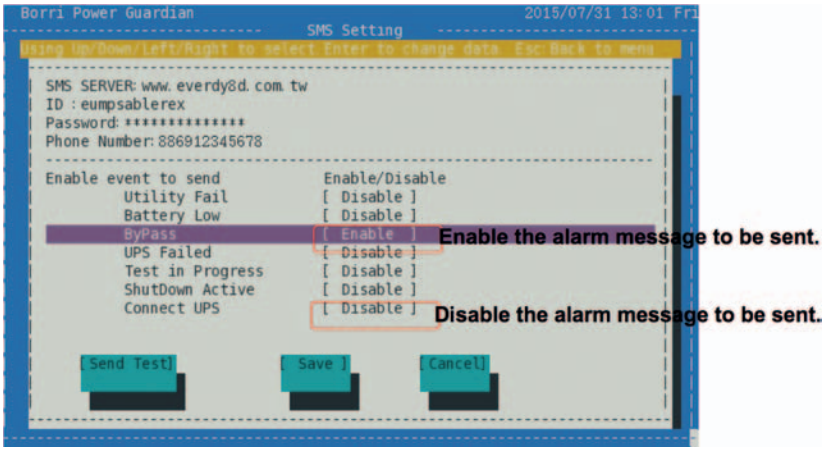
For “clickatell”: Go to http://www.clickatell.com/. Payment has to be made to obtain an “api_id” before use.



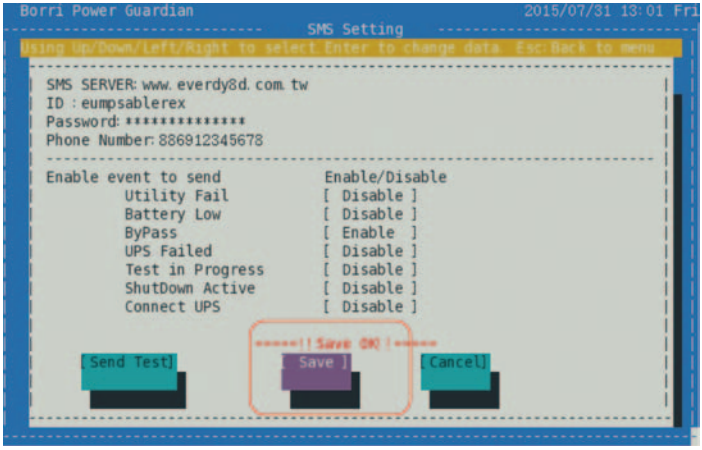
Use directional key to select item. Then press Enter key to input text. Key in the SMS provider name, account, password, api_id(for “clickatell” subscriber only) and mobile phone number (international dialing format). If you want to input several mobile phone numbers, please insert a semicolon between the numbers. Press Esc key to go back to menu.
To ensure the settings are correct, click [Send Test] to send a short test message to receivers.



2.6.3 Setting and Saving Alarm Message Enable or Disable

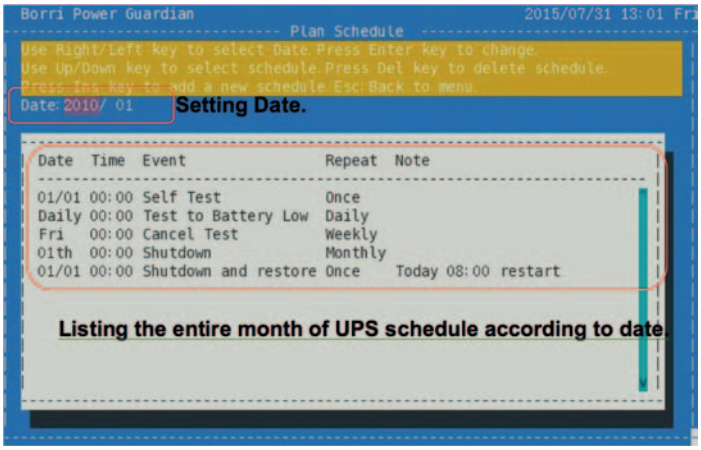

Borri Power Guardian
2015/07/31 13:01 Fri
SMS Setting
Using Up/Down/Left/Right to select Enter to change data Esc:Back to menu
SMS SERVER: www.everdy8d.com.tw
ID : eumpsablerex
Password: **********
Phone Number: 886912345678
Enable event to send
Enable/Disable
Utility Fail [Disable]
Battery Low [Disable]
ByPass [Enable]
UPS Failed [Disable]
Test in Progress [Disable]
ShutDown Active [Disable]
Connect UPS [Disable]
Enable the alarm message to be sent.
Disable the alarm message to be sent.
[Send Test]
[Save]
[Cancel]

Use the directional key to select the required event. Press Enter key to enable or disable.
Click [Save] to save all settings.



2.7 UPS Schedule (Plan UPS Schedule)

2.7.1 Function and Operation Explanation

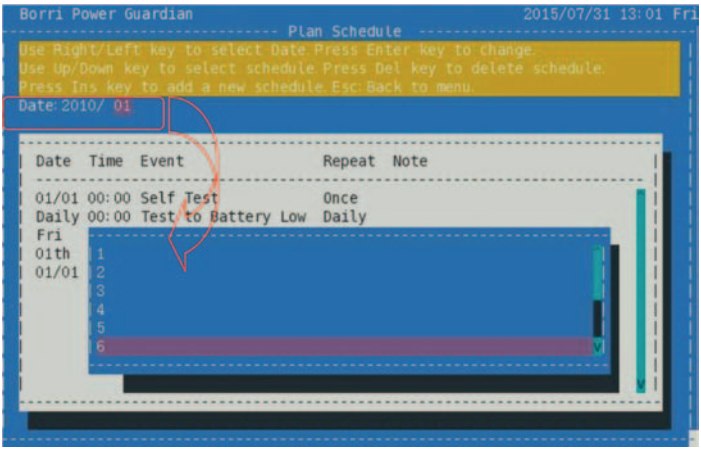

Borri Power Guardian
2015/07/31 13:01 Fri
Plan Schedule
Use Right/Left key to select Date.Press Enter key to change.
Use Up/Down key to select schedule.Press Del key to delete schedule.
Press Ins key to add a new schedule.Esc:Back to menu.
Date: 2010/ 01
Setting Date.
Date Time Event Repeat Note
01/01 00:00 Self Test Once
Daily 00:00 Test to Battery Low Daily
Fri 00:00 Cancel Test Weekly
01th 00:00 Shutdown Monthly
01/01 00:00 Shutdown and restore Once Today 08:00 restart
Listing the entire month of UPS schedule according to date.

List the entire month of UPS schedule according to setting date. Use the Ins key to add schedule and the Del key to delete schedule. The Software will send command to the UPS according to the schedule.

Provide five events and four repeat executions as below

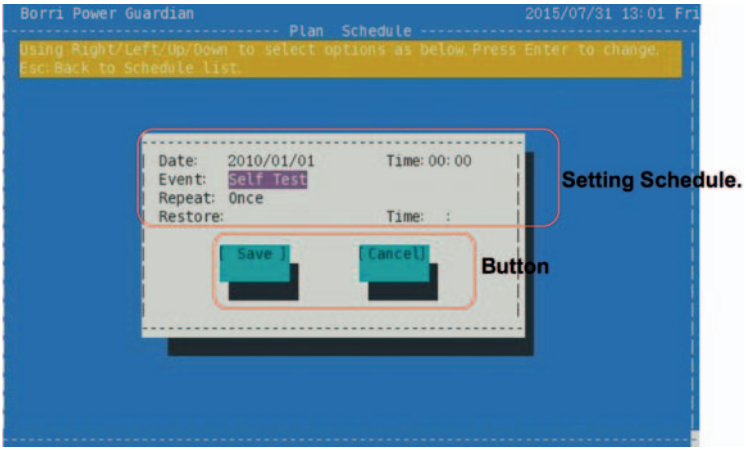
Schedule	Repeat Execution
Self Test	Once
Test to Battery Low	Daily
Cancel Test	Weekly
Shutdown	Monthly
Shutdown and restore	

2.7.2 Refer to UPS Schedule

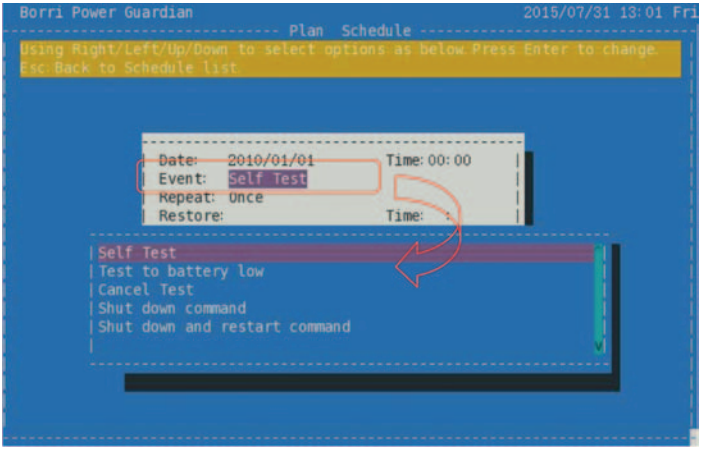


The current month is the schedule default. Use the directional key to select the desired year or month. Upon complete setting, the screen will update the schedule list according to setting date.

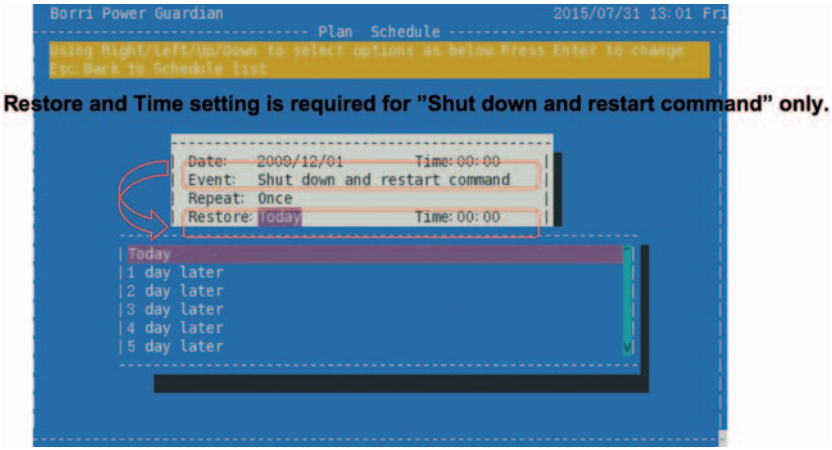
2.7.3 Add UPS Schedule



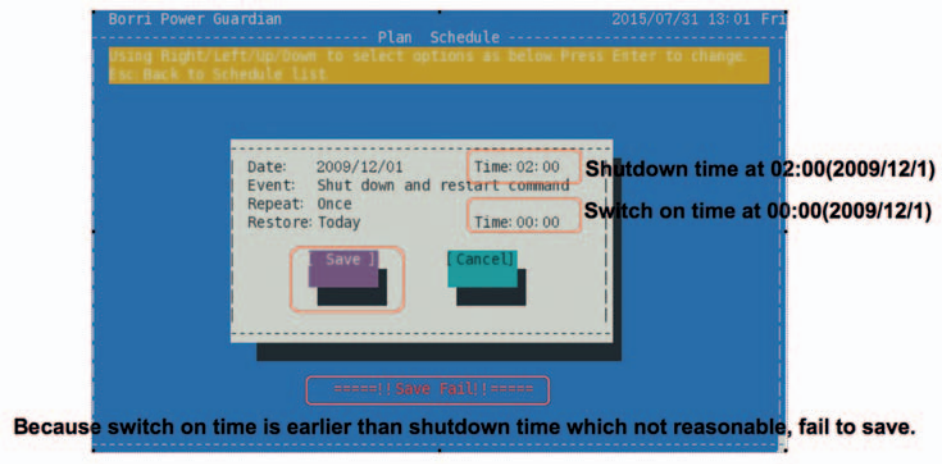
Press Ins key to add UPS schedule. Use directional key to set UPS schedule. Upon complete setting, press Esc key to go back to schedule list.



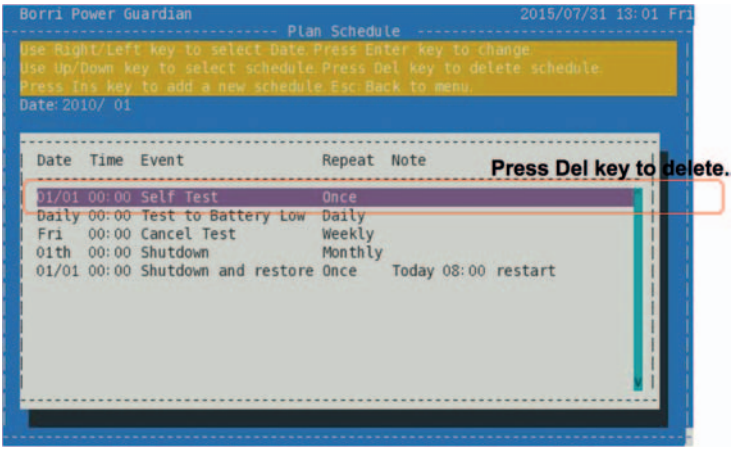
Restore and Time setting is required for “Shut down and restart command” only. User can set to switch on UPS today or several days (within the range of 1 to 5 days). If the switch on time is earlier than the shutdown time which is not reasonable, save setting won’t be allow.


Borri Power Guardian
2015/07/31 13:01 Fri
Plan Schedule
Using Right/Left/Up/Down to select options as below Press Enter to change
Esc Back to Schedule list
Restore and Time setting is required for "Shut down and restart command" only.
Date: 2009/12/01 Time: 00:00
Event: Shut down and restart command
Repeat: Once
Restore: Today Time: 00:00
Today
1 day later
2 day later
3 day later
4 day later
5 day later

After adding schedule, click [Save] function to save setting.


Borri Power Guardian
2015/07/31 13:01 Fri
Plan Schedule
Using Right/Left/Up/Down to select options as below Press Enter to change
Esc Back to Schedule list
Date: 2009/12/01 Time: 02:00
Event: Shut down and restart command
Repeat: Once
Restore: Today Time: 00:00
Shutdown time at 02:00(2009/12/1)
Switch on time at 00:00(2009/12/1)
[Save]
[Cancel]
=====!!Save Fail!!=====
Because switch on time is earlier than shutdown time which not reasonable, fail to save.

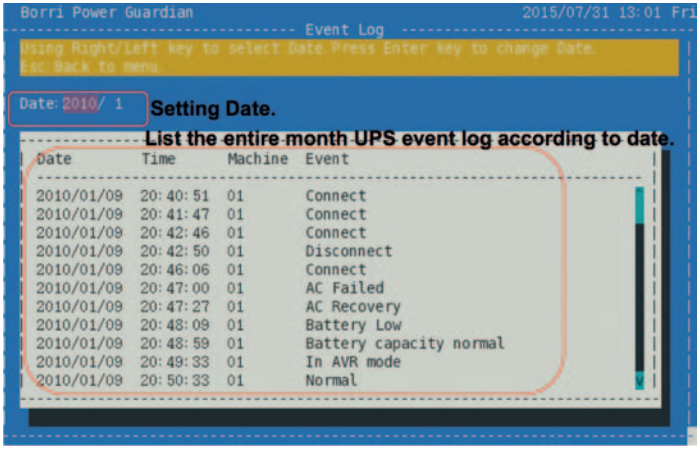
2.7.4 Delete UPS Schedule


Borri Power Guardian
2015/07/31 13:01 Fri
Plan Schedule
Use Right/Left key to select Date.Press Enter key to change.
Use Up/Down key to select schedule.Press Del key to delete schedule.
Press Ins key to add a new schedule.Esc:Back to menu.
Date:2010/ 01
Date Time Event Repeat Note
01/01 00:00 Self Test Once
Daily 00:00 Test to Battery Low Daily
Fri 00:00 Cancel Test Weekly
01th 00:00 Shutdown Monthly
01/01 00:00 Shutdown and restore Once Today 08:00 restart
Press Del key to delete.

To delete UPS schedule, Use the directional and Del key to delete.

2.8 UPS Event Log (View Event Log)

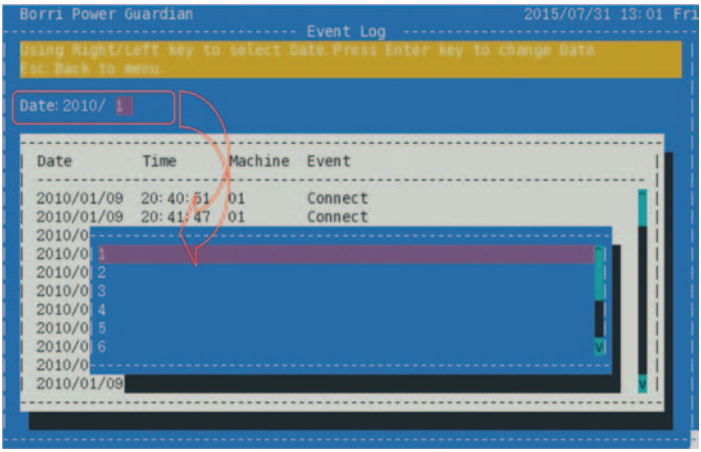
2.8.1 Function and Operation Explanation


Borri Power Guardian
2015/07/31 13:01 Fri
Event Log
Using Right/Left key to select Date.Press Enter key to change Date.
Esc Back to menu
Date: 2010/ 1
Setting Date.
List the entire month UPS event log according to date.
Date Time Machine Event
2010/01/09 20:40:51 01 Connect
2010/01/09 20:41:47 01 Connect
2010/01/09 20:42:46 01 Connect
2010/01/09 20:42:50 01 Disconnect
2010/01/09 20:46:06 01 Connect
2010/01/09 20:47:00 01 AC Failed
2010/01/09 20:47:27 01 AC Recovery
2010/01/09 20:48:09 01 Battery Low
2010/01/09 20:48:59 01 Battery capacity normal
2010/01/09 20:49:33 01 In AVR mode
2010/01/09 20:50:33 01 Normal

Provide the entire month UPS event log, user can view all status of UPS quickly via the event log. Lists of recorded event as below:

- To execute and cancel shutdown.
- To execute and complete test command.
- UPS failed and resume work.
- UPS is in AVR mode.
- Battery capacity status.
- Utility failed and resume work.
- Communication is normal.

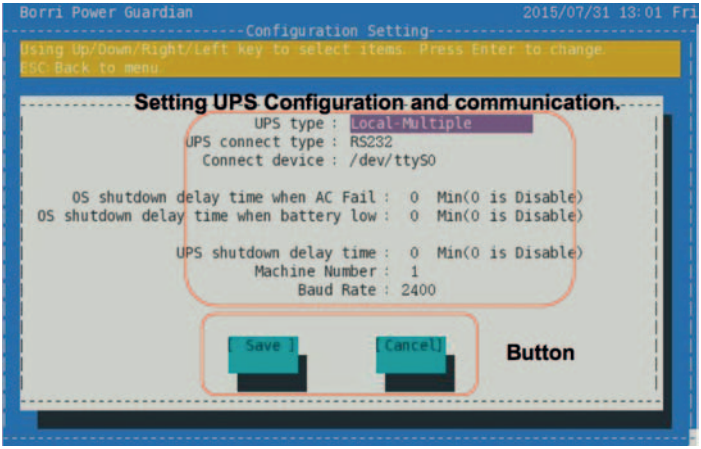
2.8.2 Refer to UPS Event Log


Borri Power Guardian
2015/07/31 13:01 Fri
Event Log
Using Right/Left key to select Date. Press Enter key to change Date.
Esc: Back to menu
Date: 2010/ 1
Date Time Machine Event
2010/01/09 20:40:51 01 Connect
2010/01/09 20:41:47 01 Connect

First it is show current month's event log default. User can view other month's event log using the directional key to select the desired year or month. Upon complete setting, the screen will update the event log list according to setting date.

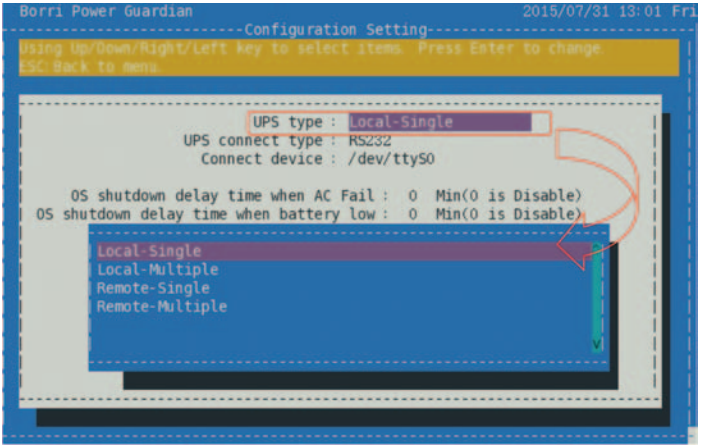
2.9 Configuration of UPS (Configuration Setting)

2.9.1 Function and Operation Explanation


Borri Power Guardian
2015/07/31 13:01 Fri
Configuration Setting
Using Up/Down/Right/Left key to select items. Press Enter to change.
ESC: Back to menu
Setting UPS Configuration and communication.
UPS type : Local-Multiple
UPS connect type : RS232
Connect device : /dev/ttyS0
OS shutdown delay time when AC Fail : 0 Min(0 is Disable)
OS shutdown delay time when battery low : 0 Min(0 is Disable)
UPS shutdown delay time : 0 Min(0 is Disable)
Machine Number : 1
Baud Rate : 2400
[Save]
[Cancel]
Button

Before monitoring UPS, it has to set communication and configuration of UPS. Explain as below.

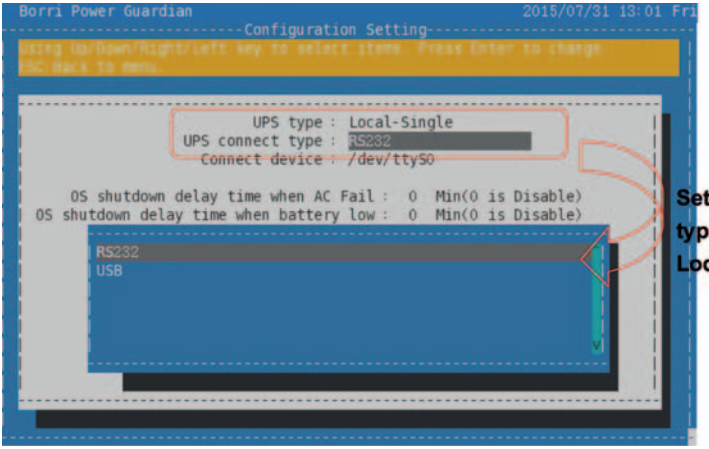
2.9.2 UPS Type


Borri Power Guardian
2015/07/31 13:01 Fri
Configuration Setting
Using Up/Down/Right/Left key to select items. Press Enter to change
ESC Back to menu
UPS type : Local-Single
UPS connect type : RS232
Connect device : /dev/ttyS0
OS shutdown delay time when AC Fail : 0 Min(0 is Disable)
OS shutdown delay time when battery low : 0 Min(0 is Disable)
Local-Single
Local-Multiple
Remote-Single
Remote-Multiple

Use the directional key to select UPS type. You can set monitoring mode which is local or remote monitoring, and machine mode is single or multiple.
Selectable items as below:

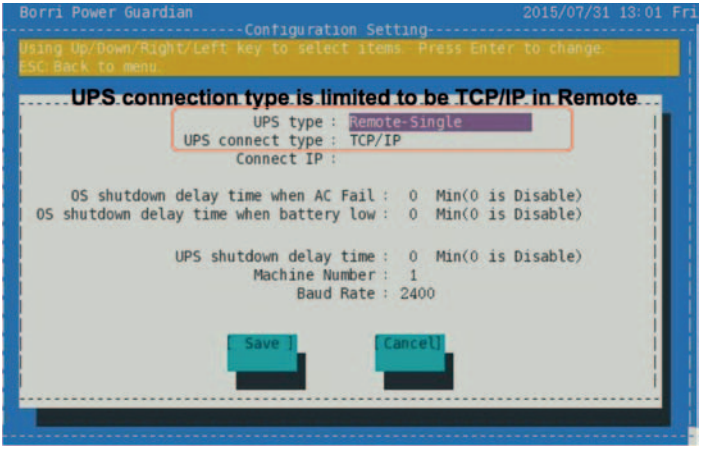
- Local-Single
- Local-Multiple
- Remote-Single
- Remote-Multiple

2.9.3 UPS connect type

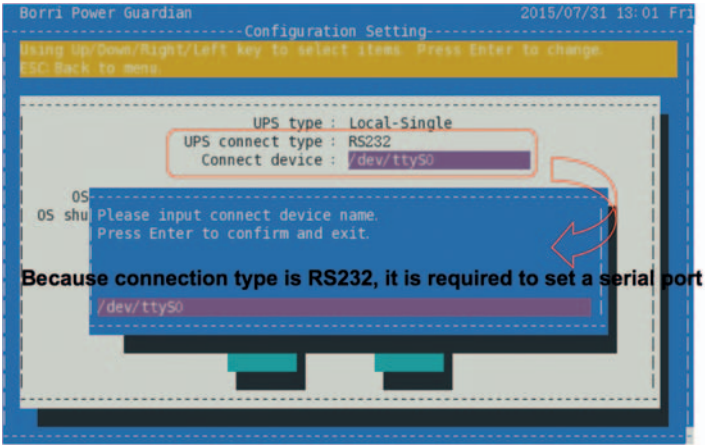

Borri Power Guardian
2015/07/31 13:01 Fri
Configuration Setting
UPS type : Local-Single
UPS connect type : RS232
Connect device : /dev/ttyS0
OS shutdown delay time when AC Fail : 0 Min(0 is Disable)
OS shutdown delay time when battery low : 0 Min(0 is Disable)
RS232
USB
Setting UPS connect type is required for Local monitor.

Using directional and Enter key to set mode of communication.
Set UPS connection type is required for Local monitor.
Connect type is limited to TCP/IP mode in remote monitor.

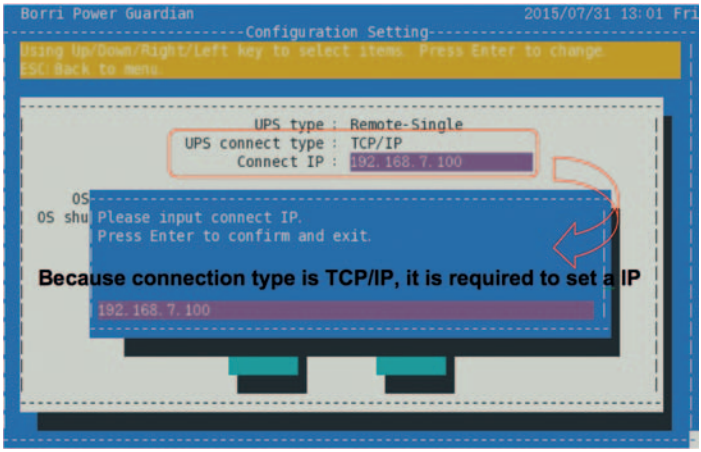
Local-Single	Local-Multiple	Remote-Single	Remote-Multiple
Connection Type is RS232 or USB.		Connection Type is TCP/IP (Only)	


Borri Power Guardian
2015/07/31 13:01 Fri
Configuration Setting
Using Up/Down/Right/Left key to select items. Press Enter to change.
ESC:Back to menu.
UPS connection type is limited to be TCP/IP in Remote.
UPS type : Remote-Single
UPS connect type : TCP/IP
Connect IP :
OS shutdown delay time when AC Fail : 0 Min(0 is Disable)
OS shutdown delay time when battery low : 0 Min(0 is Disable)
UPS shutdown delay time : 0 Min(0 is Disable)
Machine Number : 1
Baud Rate : 2400
[Save]
[Cancel]

2.9.4 Connect device (Connect IP)


Borri Power Guardian
2015/07/31 13:01 Fri
Configuration Setting
Using Up/Down/Right/Left key to select items. Press Enter to change.
ESC:Back to menu.
UPS type : Local-Single
UPS connect type : RS232
Connect device : /dev/ttyS0
Please input connect device name.
Press Enter to confirm and exit.
/dev/ttyS0
Because connection type is RS232, it is required to set a serial port

UPS Type	Local-Single	Local-Multiple	Remote-Single	Remote-Multiple
Connection Type	RS232, USB		TCP/IP	
Connection Device	RS232 is required to set a serial port.		IP Address	


Borri Power Guardian
2015/07/31 13:01 Fri
-Configuration Setting-
Using Up/Down/Right/Left key to select items. Press Enter to change.
ESC Back to menu.
UPS type : Remote-Single
UPS connect type : TCP/IP
Connect IP : 192.168.7.100
Please input connect IP.
Press Enter to confirm and exit.
Because connection type is TCP/IP, it is required to set a IP
192.168.7.100

2.9.5 OS shutdown delay time when AC Fail

The function provides to set delay time to shutdown OS when utility failed. When utility failed, software will shut down OS according to delay time and send shutdown message to inform online users. Delay time is between 0 to 99 minutes. 0 minute indicates function disable.

2.9.6 OS shutdown delay time when Battery Low

The function provides to set delay time to shutdown OS when battery low. When battery low, software will shut down OS according to delay time and send shutdown message to inform online users. Delay time is between 0 to 99 minutes. 0 minute indicates function disable.

2.9.7 UPS shutdown delay time

The function provides to set delay time to shutdown ups. When utility failed or executing shutdown schedule, software will shut down UPS according to delay time. When enabling “OS shutdown delay time” function (delay time is more than 0 minute), UPS shutdown time equals OS shutdown delay time plus UPS shutdown delay time. Delay time is between 0 to 99 minutes. 0 minute indicates function disable when utility failed. But when executing shutdown schedule, delay time is 1 minute default.

2.9.8 Machine Number

The function sets the number of machines. In single mode, machine is limited to one. Set the number of machines is only available in multiple mode.

Local-Single	Local-Multiple	Remote-Single	Remote-Multiple
Not allow to set the number of machines. (machine is limited one)	Allow to set the number of machines. (range from 1 to 4 machines)	Not allow to set the number of machines. (machine is limited one)	Allow to set the number of machines. (range from 1 to 4 machines)

2.9.9 Baud Rate

The function sets the communication transmission speed of computer. Transmission speed of computer must be the same as machine.

3. Troubleshooting

3.1 Symptom: error while loading shared libraries: libtinfo.so.5

When executing software, below message appear on the screen:
error while loading shared libraries: libtinfo.so.5: cannot open shared object file:
No such file or directory Solution:

3.1.1 Install ncurses pack.

3.1.2 sudo ln -s /lib/libncurses.so.5 /usr/lib/libtinfo.so.5

3.2 Symptom: error while loading shared libraries: libtinfo.so.0

When executing software, below message appear on screen:
error while loading shared libraries: libusb-1.0.so.0: cannot open shared object file:
No such file or directory
Solution:

3.2.1 Install libusb 1.0 pack.

L59018revA man. - 09-2015